Docket # P11495 Serial No. 09/964,765

Claim Amendments

1-30. Canceled.

31. (New): A graphics controller comprising:

a W-buffer to store normalized W values for pixels of an image in a variable format; and

a depth tester to determine whether a current pixel is occluded by a previous pixel based upon a normalized W value of the W-buffer for the previous pixel.

32. (New): The graphics controller of claim 31, further comprising a depth interpolator to generate normalized W values for pixels of the image that are indicative of a depth of each pixel.

33. (New): The graphics controller of claim 32 further comprising a write format converter to receive the normalized W values from the depth interpolator and to write the normalized W values to the W-buffer in the variable format.

34. (New): The graphics controller of claim 32 further comprising

a register that identifies a number of fraction bits and a number of exponent bits for the variable format of the W-buffer, and

a write format converter to receive the normalized W values from the depth interpolator and to write the normalized W values to the W-buffer using the number of fraction bits and the number of exponent bits identified by the register.

35. (New): The graphics controller of claim 32 further comprising

a write format converter to write the normalized W values to the W-buffer in the variable format, and

a read format converter to read the normalized W values from the W-buffer in the variable format and to provide the normalized W values to the depth tester in a predetermined format.

37. (New): A method comprising

generating a plurality of normalized W values representative of pixel depths of an image,

converting the normalized W values to a floating point format that is dependent upon depth parameters of the image, and

storing the normalized W values using the floating point format.

38. (New): The method of claim 37 further comprising determining whether a pixel is occluded by another pixel based upon a stored normalized W value for the another pixel.

39. (New): The method of claim 38 further comprising displaying non-occluded pixels of the image.

40. (New): The method of claim 37 further comprising determining a number of fraction bits and a number of exponent bits for the floating point format.

41. (New): The method of claim 37 further comprising determining a number of fraction bits and a number of exponent bits for the floating point format based upon depth parameters of the image.

42. (New): The method of claim 37 further comprising determining a number of fraction bits and a number of exponent bits for the floating point format based upon a ratio between a near depth value associated with a near plane of the image and a far depth value associated with a far plane of the image.

43. (New): A system comprising

a display device to display pixels of an image,

a W-buffer to store normalized W values for pixels of an image in a variable format;

a depth tester to determine whether a current pixel is occluded by a previous pixel based upon a normalized W value of the W-buffer for the previous pixel, and

a display engine to provide the display device with non-occluded pixels of the image.

44. (New): The system of claim 43 further comprising a depth interpolator to generate normalized W values for pixels of the image that are indicative of a depth of each pixel.

45. (New): The system of claim 43 further comprising a write format converter to receive the normalized W values from the depth interpolator and to write the normalized W values to the W-buffer in the variable format.

46. (New): The system of claim 43 further comprising

a register that identifies a number of fraction bits and a number of exponent bits for the variable format of the W-buffer, and

a write format converter to write the normalized W values to the W-buffer using the number of fraction bits and the number of exponent bits identified by the register.

47. (New): The system of claim 43 further comprising

a write format converter to write the normalized W values to the W-buffer in the variable format, and

a read format converter to read the normalized W values from the W-buffer in the variable format and to provide the normalized W values to the depth tester in a predetermined format.

48. (New): The system of claim 45 further comprising a processor to determine a number of fraction bits and a number of exponent bits for the variable format of the W-buffer and to write one or more values to the register to identify the number of fraction bits and the number of exponent bits for the variable format of the W-buffer.

49. (New): The system of claim 45 further comprising a processor to

determine a number of fraction bits and a number of exponent bits for the variable format of the W-buffer based upon depth parameters of the image, and

write one or more values to the register to identify the number of fraction bits and the number of exponents bits for the variable format of the W-buffer.

determining a number of fraction bits and a number of exponent bits for the floating point format.

50. (New): The system of claim 45 further comprising a processor to

determine a number of fraction bits and a number of exponent bits for the variable format of the W-buffer based upon a ration between a near depth value associated with a near plane of the image and a far depth value associated with a far plane of the image, and

write one or more values to the register to identify the number of fraction bits and the number of exponents bits for the variable format of the W-buffer.

51. (New): A machine readable medium comprising a plurality of instructions that in response to being executed result in a computer system

determining, based upon a first image, a first floating point format for normalized W values of the first image, and

configuring a W-buffer to store the normalized W values of the first image using the first floating point format.

52. (New): The machine readable medium of claim 51 wherein the plurality of instructions further result in the computer system

determining, based upon a second image, a second floating point format for normalized W values of the second image, and

configuring the W-buffer to store normalized W values of the second image using the second floating point format.

53. (New): The machine readable medium of claim 52 wherein the plurality of instructions further result in the computer system

determining, based upon depth parameters of the first image, a first number of fraction bits and a first number of exponent bits for the first floating point format, and

determining, based upon depth parameters of the second image, a second number of fraction bits and a second number of exponent bits for the second floating point format.

54. (New): The machine readable medium of claim 52 wherein the plurality of instructions further result in the computer system

determining, based upon a first ratio between a first near depth value associated with a first near plane of the first image and a first far depth value associated with a first far plane of the first image, a first number of fraction bits and a first number of exponent bits for the first floating point format, and

determining, based upon a second ratio between a second near depth value associated with a second near plane of the second image and a second far depth value associated with a second far plane of the second image, a second number of fraction bits and a second number of exponent bits for the second floating point format.